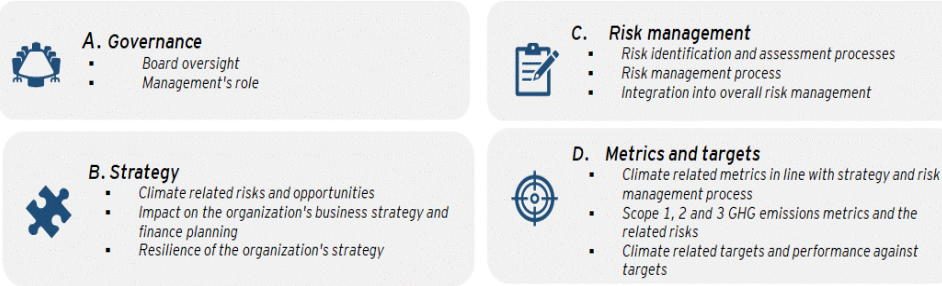


Climate-related risks and opportunities aligned with TCFD guidelines

J.K Cement Limited monitors the changing business landscape and markets in order to identify feasible new prospects for a low-carbon economy transition. Climate change poses physical and transitional risks while giving an opportunity for businesses to grow. In order to improve transparency for organizations climate-related risks & opportunities, we have adopted Task Force on Climate-related Financial Disclosure (TCFD)'s recommendations and will be sharing our progress periodically. The TCFD Recommendations, first launched in 2017, are designed to encourage consistent and comparable reporting on climate-related risks and opportunities by companies to their stakeholders. The TCFD Recommendations are structured around four content pillars: (i) Governance; (ii) Strategy; (iii) Risk Management; and (iv) Metrics & Targets.

Core elements of Task Force on Climate-related Financial Disclosures (TCFD)



Governance

JKCL has established a robust governance framework to shape climate change and sustainability strategies for driving related actions, addressing risks and opportunities, and ensuring accountability.

Board's oversight of climate related risks & opportunities

JKCL's Board has the overall responsibility of guidance and steering through the climate change vision and principle in the conduct and operation of the company. Board's responsibilities include providing overall vision, policies, strategic direction to sustainability programme, approvals for major investments for sustainability projects and review proposals tabled by CSR Committee. **Managing Director (MD)** is the highest individual responsible for managing climate-related risks & opportunities. Our Board Committees includes Audit Committee, Risk management Committee, CSR Committee, Nomination & Remuneration Committee, and Stakeholder Relationship Committee.

The board members meet quarterly to provide strategic directions and promoting sustainability across the organization supported by various committees and councils.

The Risk Management Committee meets quarterly to monitor, assess, and review climate risks in alignment with TCFD and deliberates action plans which can potentially mitigate those risks. Based on the review, necessary interventions are implemented to ensure resilience within J.K. Cement Limited's business model to be able to mitigate/ utilize upcoming risks and opportunities.

The Risk Management Committee (RMC) chaired by independent director who is entrusted with the responsibility to assist the Board in framing policy, guiding implementation, monitoring, and reviewing the effectiveness of risk framework and related opportunities.

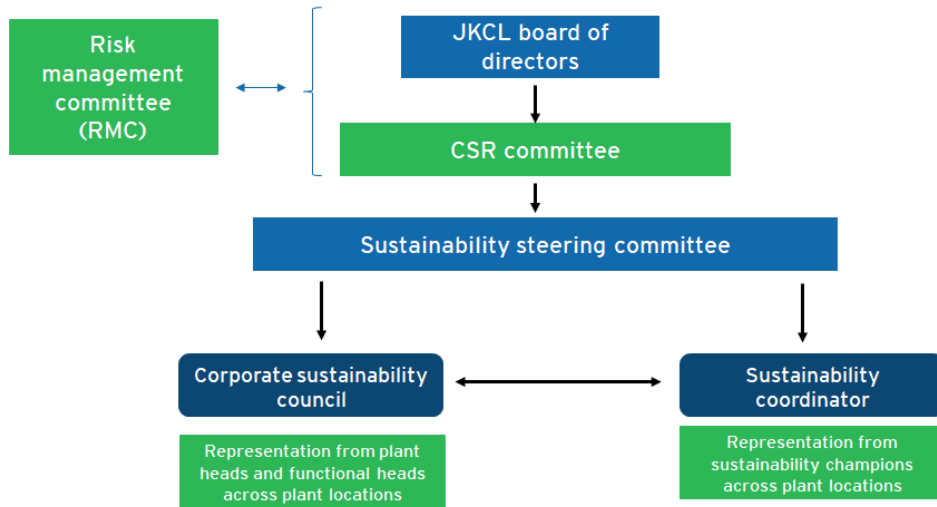
The board level Risk Management Committee (RMC) integrates climate related risks within the organization's Enterprise Risk Management (ERM) framework and prioritizes various risks.

Management's role in assessing and managing climate-related risks & opportunities.

JKCL has set up a multi-layered climate governance structure that ensures sustainable operations. The CSR Committee of the Board oversees the workings of the Sustainability Steering Committee comprising of the Managing Director, C-Suite and the Environment and Sustainability Head.

Chief Executive Officer (CEO) is the highest apex head at management level who is responsible for managing climate-related risks & opportunities and communicating them to the senior management. The Sustainability steering committee reports the CSR committee on a quarterly basis on progress of climate related risks and opportunities. Further, there are plant heads forming the corporate sustainability council and sustainability champions across plant locations who are responsible for implementing measures aligned to the company's strategy for climate-related risks and opportunities at the location level. The corporate sustainability council and sustainability coordinator collect and monitor climate-related data and report the same to sustainability steering committee.

J.K. Cement Limited governance for climate related risks & opportunities



J.K. Cement limited encourages management to achieve climate related targets by integrating it in the Key Responsibility Areas (KRAs) within the Performance Management System (PMS) of J.K. Cement Limited personnel. JKCL has also implemented KAIZEN (continuous improvement linked to monetary benefits) to address the climate risk.

● Strategy

In line with the TCFD recommendations, JKCL has carried out a comprehensive risk assessment review to identify climate-related physical and transition risks across different time horizons.

TCFD category	Risk type	Risk description	Time Horizon ¹
Physical Risks	Acute	Floods, storms, cyclones, and extreme weather events.	Short-Term
	Chronic	Variation in temperature, precipitation, and water stress over a period of time.	Long-Term
Transitional Risks	Policy and regulation	<ul style="list-style-type: none"> Introduction of carbon tax or Emission Trading Scheme (ETS) in future. 	Long-Term

¹ Short Term (0-3 years); Medium Term (3-10 years); Long Terms (10-30 years)

		<ul style="list-style-type: none"> Perform Achieve and Trade (PAT) Scheme- Current Regulation 	
Technology		Early retirement of assets before their useful life due to low-carbon transition.	Long-Term
Market		<ul style="list-style-type: none"> Changing customer behaviour towards green products. Increased cost of raw materials 	Long-Term
Reputation		Increased stakeholder concern or negative stakeholder feedback for not being able to achieve global targets.	Medium-Term

Climate-related risks and opportunities have significantly influenced J.K. cement Limited's business strategy. To avoid adverse effects of climate-related risks, JKCL has formulated a robust business mitigation strategy (Refer Risk mitigation section under Risk Management) to manage both physical as well as transitional risks.

With robust risk treatment in place, our business and infrastructure are resilient to climate related changes in future.

Climate-related risks and opportunities have significantly influenced our financial planning. Our focus has been on making investments towards green technologies so as to move closer to our low carbon scenario. We have ear-marked funds for spending on low emission technologies for carbon mitigation and on increasing resilience, establishing the Internal Carbon Pricing (ICP) of climate prone sites for better adaptation.

Scenario Analysis

Climate-related scenarios allow J.K. cement Limited build up understanding of how climate-related physical and transition risks might plausibly impact the businesses over the time. Scenario analysis, therefore, evaluates a range of hypothetical outcomes by considering a variety of alternative plausible future states (scenarios) under a given set of assumptions and constraints.

For **physical (chronic) risks**, we have considered the latest set of scenarios released mentioned in IPCC AR6 (6th Assessment report) released in 2021. These are known as Shared Socioeconomic Pathways (SSPs). SSPs are scenarios which are extension of RCPs (Representative Concentration Pathways) and are projected socioeconomic global changes up to 2100. They are used to

derive greenhouse gas emissions scenarios with different climate policies. We have assessed SSP 1.9, SSP 2.6, SSP 4.5, SSP 7.0, SSP 8.5 over different timeframes to assess the impact of chronic risks.



Site Name	Acute physical risk			Chronic physical risk		
	Flood	Drought	Cyclone	Water stress	Temperature variation	Precipitation variation
Nimbahera	Low-medium	High	Low	Extremely high	Medium-high	Decrease
Mangrol	Low-medium	High	Low	Extremely high	Medium-high	Decrease
Muddapur	High	High	Moderate	High	<40 °C	Increase
Gotan grey	Low-medium	High	Low	Extremely high	Medium-high	Decrease
Aligarh	Low-medium	High	Low	Extremely high	Medium-high	Decrease
Balasinor	High	High	Low	High	40-45 °C	Decrease
Gotan	Low-medium	High	Low	Extremely high	Medium-high	Decrease
Katni	High	High	Low	High	Medium-high	Decrease
Jharli	High	High	Low	Extremely high	Medium-high	Decrease

● Extremely high
 ● High
 ● Medium-high
 ● Moderate
 ● Low-medium
 ● Low
 ● No risk
● >45 °C
 ● 40-45 °C
 ● <40 °C
 ● Increase
 ● Decrease

2

For **transitional risks**, a scenario analysis was undertaken in accordance with Well-Below 2-degree Celsius (WB2C) scenario for J.K. Cement Limited. The possible impact of evolving climate policies has been considered in order to assess the Company's resiliency as well as prospective decarbonization paths in order to comply with policy mechanisms such as Emission Trading Schemes (ETS) or carbon tax in near future.

Opportunities

While J.K. Cement Limited has implemented a robust climate change strategy and governance framework, we believe that the future holds many opportunities in low carbon transition as listed below:

Type	Climate –Related Opportunities
Resource Efficiency	Optimization of Natural Resources: JKCL commits to reduce consumption of natural resources and increase use of waste and by-products. We plan to increase tonne of cement produced per tonne of clinker. This gives us an opportunity for reduction of natural resources such as limestone as well as GHG emissions.

Type	Climate –Related Opportunities
	<p>Water conservation and replenishment: J.K. Cement Ltd. has focused on responsible water use and climate change has provided us with a potential opportunity to reduce consumption and increase recycling and reuse. All our manufacturing facilities are zero-water discharge plants that treat and reuse all domestic and industrial wastewater generated on-site. Rainwater harvesting integrated Air-Cooled Condensers (ACC) with Captive Power Plants (CPP) installed mine water treatment plant add to our collective efforts to reduce water consumption across our operations. Our initiatives have resulted in significant water-use efficiency improvements, creating social equity and reduced water availability risks.</p> <p>Use of Alternative Fuel & Raw Materials (AFR): Use of AFR gives us an opportunity to reduce GHG emissions as well utilize waste from other industries, thereby embedding circular economy within our operations. JKCL's AFR use is expected to grow four times in the near future. We have achieved a Thermal Substitution Rate (TSR) of 8.9% in FY22 and target to reach by 35% by FY30.</p> <p>Increases use of Waste Heat Recovery (WHR) J.K. Cement Ltd. generates power from waste flue gases to generate power, thereby giving us an opportunity to reduce fossil fuel-based power. We have a target of achieving 84.3 MW installed capacity of WHRS by FY24.</p>
Energy Sources	Use of lower-emission sources of energy Climate related transition provides opportunity for J.K. Cement Ltd. to transition to low carbon energy sources. JKCL is committed to UN Energy Compact, targeting a green power share of 75% in total power mix by 2030.
Products & Services	Development and/or expansion of low emission goods and services J.K. Cement Ltd. is focussing on producing green (blended) cements. As on date, 65% of the cement produced is blended comprising of PPC, PSC and PCC. The rest 20% comprises of OPC. By FY30, we aim to make 80% blended cement and make all our products green.
Markets	Access to new markets JKCL is making efforts towards carbon neutrality which are ambitious as compared to global cement sector. Carbon markets and Emission trading scheme

² Temperature variation and precipitation variation are presented under SSP 8.5 scenario for 2080-2099

Type	Climate –Related Opportunities
	is expected to be introduced in Indian market. Achievement of targets will lead to generation of energy certificates which is expected to provide additional revenue.
Resilience	<p>Development of climate adaptation and resilience</p> <p>Moving towards low carbon economy helps build resilience towards future risks. JKCL has taken near-term SBTi target. These initiatives which also includes adoption of Renewable energy are based on the prospect that it will help us build resilience in a future resource-constrained world, where costs and carbon markets may pose a risk to organization’s operations. Our diverse operations in terms of geography as well as diverse energy mix, gives us strong edge and resilience towards climate change.</p>

● Risk Management

Climate change-related risks are identified, assessed, and managed using a multidisciplinary company-wide risk management strategy which is then integrated in organizations’ overall EMF framework.

The **risk identification** process at J.K. Cement Limited starts with identification of sources of risk, areas of impact events (including emerging trends) and their causes and their potential consequences, on the achievement of business objectives. With respect to climate, risks are classified as physical risks (Acute and chronic) and transitional risks (Policy, Reputational, Market, Technology). Next step is **risk assessment** which involves evaluating the extent to which the potential event might affect the company. Next is **Risk prioritization** which involves evaluating and assessing the potential impact, likelihood, of the identified risks. This would enable prioritization of risks, basis criticality, and help decide on the appropriate risk management strategy. Next step involves **risk mitigation** which refers to mitigation plans developed towards reducing the probability of occurrence or the impact of risk event. Finally, **risk reporting and disclosures** is done which ensures that relevant risk information is available across all levels of the Company in a timely manner to provide the necessary basis for risk-informed decision-making. Risk Management Committee shall monitor all aspects of an identified risk on a regular basis as the risk exposure may undergo changes from time-to time due to continuously changing environment.



Risk management process

J.K. Cement Limited has conducted geography wise³ assessment of its sites for physical risk, both acute and chronic.

Risk Mitigation

For **physical risks**, we have identified adaptive measures against each physical risk (Floods, Cyclones, Droughts, water stress, precipitation etc.) for all our existing sites. For our future/upcoming sites, we have developed SOP’s for conducting climate risk assessment specific to each site. Based on the risk assessment exercise future strategies will be developed. This ensures that the climate risks and associated mitigation/adaptive controls are embedded at the inception stage itself. In addition, we are taking steps to protect our sites from threats and costly repairs associated with an Emergency Response Plan (ERP) in place for each site.

With regards to **transitional risk**, JKCL has developed a transition plan under the well below 2°C scenario which is under validation and has committed to the Science Based Target initiative’s (SBTi). We are in the process of getting our targets validated from SBTi. We already have our internal targets in place. Once done, we will release our plan to transition towards net-zero targets.

● Targets & Metrics

J.K. Cement Ltd. has taken a target of reducing specific CO₂ emission intensity (Scope 1+2) from 680 to 532 kgCO₂/t of cementitious products by 2030. In FY22, the total Scope 1 and Scope 2 emissions from our operations was 80,22,628 tCO₂e an increase of 8.26% from the previous year. From the previous reporting year (FY2021), we have started accounting our Scope 3 emissions

Key Metrics

J.K. Cement Limited assesses, monitors, and optimizes its scope 1, 2 and 3 emissions periodically.

Specific cementitious emission intensity	FY 20	FY 21	FY 22
Scope 1+Scope 2 specific cementitious emission intensity	680	645	596

³ We have used [WRI aqueduct tool](#), [WB Climate Change Knowledge Portal \(CCKP\)](#), National Disaster Management Authority document.

Scope 3 specific cementitious emission intensity	-	89	101
All figures are in kgCO ₂ /t of cementitious products			

Strategic Goals

Besides targets for GHG emissions, J.K. Cement Limited has also taken following targets for near-term and long term:

- To become 5 times water-positive by 2030.
- Ambition to have 75% green power out of total power consumed by 2030.
- Achieve thermal substitution rate (TSR) to 35% by 2030.
- To reduce clinker factor to the level of 65% by consuming industrial waste & alternative raw material such as fly ash & slag in cement manufacturing.
- Achieving 84.3 MW installed capacity of WHRS by FY24.

Internal Carbon Pricing

J.K. Cement Limited uses Internal Carbon Pricing (ICP) as an important enabler for decarbonization. To better manoeuvre in the dynamic regulatory environments, JKCL has implemented shadow carbon pricing by taking into consideration the existing indirect carbon taxes imposed by government such as coal cess, Renewable Purchase Obligation (RPO) scheme. Established carbon taxation systems prevailing worldwide such as Emission Trading System, Carbon taxes and ICP value adopted by Indian peers have also been factored in to monetize the carbon emissions. Following this approach, JKCL has estimated an Internal Carbon Price (ICP) of USD 19/ tCO_{2e} (tonnes of carbon dioxide equivalent) for all its businesses. Putting a price on carbon emissions is a testament to our commitment in fostering low carbon economy and shows our sincerity towards GHG emissions abatement.

Integrating internal carbon price in our business planning process helps our company to assess climate-related risks and opportunities, prepare for future climate regulations, steer investments towards the low carbon technologies and assess the resilience of investments to such regulations. This can also serve to stimulate innovative ideas on how to best allocate capital to deliver higher returns in a low-carbon economy.



Setting up the Internal Carbon Price

Cement industry is one of the most strategically important industries for our country. However, it is also one of the hard-to-abate sectors, being one of the largest CO₂ emitters globally. In order to decarbonize this sector, internal carbon pricing has emerged as a viable solution for cement companies in current times.

Currently, there are no direct regulations governing the carbon taxation in India. However, the government has established various policies and schemes that impose an indirect carbon tax, such as Renewable Power Obligation (RPO) scheme and Coal Cess, in accordance with the climate action strategy and the Nationally Determined Contributions (NDCs) set by India. In the upcoming years, Indian government may introduce regulations on carbon pricing which will have a financial impact on the businesses. Considering all these factors, JKCL has voluntarily decided to set an Internal Carbon price with an intent to accelerate decarbonization within the company and across the value chain.

To better manoeuvre in the dynamic regulatory environments, JKCL has implemented shadow carbon pricing by taking into consideration the existing indirect carbon taxes imposed by government such as coal cess, Renewable Purchase Obligation (RPO) scheme. Established carbon taxation systems prevailing worldwide such as Emission Trading System, Carbon taxes and ICP value adopted by Indian peers have also been factored in to monetize the carbon emissions. Following this approach, JKCL has estimated an Internal Carbon Price (ICP) of USD 19/ tCO₂e (tonnes of carbon dioxide equivalent) for all its businesses. Putting a price on carbon emissions is a testament to our commitment in fostering low carbon economy and shows our sincerity towards GHG emissions abatement.

Integrating internal carbon price in our business planning process helps our company to assess climate-related risks and opportunities, prepare for future climate regulations, steer investments towards the low carbon technologies and assess the resilience of investments to such regulations. Setting a price on carbon enables our company to assess the attractiveness of projects in different scenarios and helps make better decisions to future-proof the business. This can also serve to stimulate innovative ideas on how to best allocate capital to deliver higher returns in a low-carbon economy.